NI_RBR

| paragraph_id | release | segment | req_title | req_type | req_cat | funct_status | text | interpretation |
|---|---|---|---|---|---|---|---|---|
| NI-0010#A | A | FOS \| SDPS \| CSMS | Communications with TDRSS | TBD | TBD | partially met | ECS shall have the capability to communicate with the TDRSS via the EDOS/Ecom interface. | |
| NI-0010#B | B | FOS \| SDPS \| CSMS | Communications with TDRSS | TBD | TBD | all functionality complete | ECS shall have the capability to communicate with the TDRSS via the EDOS/Ecom interface. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0020#A | A | FOS \| CSMS | Commanding via TDRSS | interface | TBD | partially met | ECS shall have the capability to communicate with the TDRSS for transmitting commands to EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft command operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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| NI-0020#B | B | FOS \| CSMS | Commanding via TDRSS | interface | TBD | all functionality complete | ECS shall have the capability to communicate with the TDRSS for transmitting commands to EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft command operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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| NI-0030#A | A | FOS \| SDPS \| CSMS | Telemetry via TDRSS | interface | TBD | partially met | ECS shall have the capability to interface with the TDRSS for obtaining return link (telemetry) data from EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft telemetry operations will be documented in the EOS mission Detailed Mission Requirements documents. | |

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| NI-0030#B | B | FOS \| SDPS \| CSMS | Telemetry via TDRSS | interface | TBD | all functionality complete | ECS shall have the capability to interface with the TDRSS for obtaining return link (telemetry) data from EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft telemetry operations will be documented in the EOS mission Detailed Mission Requirements documents. | |

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| NI-0110#A | A | FOS \| CSMS | Communications with NCC | interface | TBD | fully met | ECS shall have the capability to communicate with the NCC via the Ecom interface. | |
| NI-0110#B | B | FOS \| CSMS | Communications with NCC | interface | TBD | no new functionality | ECS shall have the capability to communicate with the NCC via the Ecom interface. | |
| NI-0120#A | A | FOS | TDRSS Schedule Requests to NCC | interface | TBD | fully met | ECS shall have the capability to send TDRSS schedule requests to the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0120#B | B | FOS | TDRSS Schedule Requests to NCC | interface | TBD | no new functionality | ECS shall have the capability to send TDRSS schedule requests to the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |
| NI-0130#A | A | FOS | Schedule Result Messages from NCC | interface | TBD | fully met | ECS shall have the capability to receive schedule result messages from the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0130#B | B | FOS | Schedule Result Messages from NCC | interface | TBD | no new functionality | ECS shall have the capability to receive schedule result messages from the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |
| NI-0140#A | A | FOS | TDRSS Schedules from NCC | interface | TBD | fully met | ECS shall have the capability to receive TDRSS schedule messages from the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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| NI-0140#B | B | FOS | TDRSS Schedules from NCC | interface | TBD | no new functionality | ECS shall have the capability to receive TDRSS schedule messages from the NCC. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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| NI-0150-a#A | A | FOS | Non-telemetry Messages to NCC | interface | TBD | TBD | ECS shall have the capability to send other non-telemetry data messages to the NCC, which includes at a minimum status and reconfiguration messages. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. (Partial Implementation for Release A) | |

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| NI-0150-a#B | B | FOS | Non-telemetry Messages to NCC | interface | TBD | TBD | ECS shall have the capability to send other non-telemetry data messages to the NCC, which includes at a minimum status and reconfiguration messages. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. (Partial Implementation for Release A) | |

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| NI-0150-b#B | B | FOS | Non-telemetry Messages to NCC | interface | TBD | TBD | ECS shall have the capability to send other non-telemetry data messages to the NCC, which includes at a minimum status and reconfiguration messages. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. (Full Implementation for Release B) | |

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| NI-0160#A | A | FOS | Non-telemetry messages from NCC | interface | TBD | TBD | ECS shall have the capability to receive other non-telemetry data messages from the NCC, which includes at a minimum status and reconfiguration messages. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0160#B | B | FOS | Non-telemetry messages from NCC | interface | TBD | fully met | ECS shall have the capability to receive other non-telemetry data messages from the NCC, which includes at a minimum status and reconfiguration messages. These messages will be defined in the ICD Between the GSFC MOCs and the NCCDS. | |

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| NI-0170#A | A | FOS | GN,DSN,WOTS Contingency Scheduling | interface | TBD | fully met | ECS shall have the capability to communicate with the NCC to coordinate support from GN, DSN, and WOTS for EOS missions. This interface is defined in the Operations Interface Procedures Between the Network Control Center (NCC) and the Spaceflight Tracking and Data Network Users. | |

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| NI-0170#B | B | FOS | GN,DSN,WOTS Contingency Scheduling | interface | TBD | no new functionality | ECS shall have the capability to communicate with the NCC to coordinate support from GN, DSN, and WOTS for EOS missions. This interface is defined in the Operations Interface Procedures Between the Network Control Center (NCC) and the Spaceflight Tracking and Data Network Users. | |

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| NI-0210#A | A | FOS \| CSMS | Communications with GN/DSN/WOTS | interface | TBD | partially met | ECS shall have the capability to communicate with the GN, DSN, and WOTS via the EDOS/Ecom interface. | |
| NI-0210#B | B | FOS \| CSMS | Communications with GN/DSN/WOTS | interface | TBD | all functionality complete | ECS shall have the capability to communicate with the GN, DSN, and WOTS via the EDOS/Ecom interface. | |

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| NI-0220#A | A | FOS \| CSMS | Commanding via GN/DSN/WOTS | interface | TBD | fully met | ECS shall have the capability to communicate with the GN, DSN, and WOTS for transmitting commands to EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft command operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0220#B | B | FOS \| CSMS | Commanding via GN/DSN/WOTS | interface | TBD | no new functionality | ECS shall have the capability to communicate with the GN, DSN, and WOTS for transmitting commands to EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft command operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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| NI-0230#A | A | FOS \| CSMS | Telemetry via GN/DSN/WOTS | interface | TBD | partially met | ECS shall have the capability to interface with the GN, DSN, and WOTS for obtaining return link (telemetry) data from EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft telemetry operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0230#B | B | FOS \| CSMS | Telemetry via GN/DSN/WOTS | interface | TBD | all functionality complete | ECS shall have the capability to interface with the GN, DSN, and WOTS for obtaining return link (telemetry) data from EOS spacecraft (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft telemetry operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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| NI-0240#B | B | FOS | Non-telemetry data from GN/DSN/WOTS | interface | TBD | fully met | ECS shall have the capability to receive non-telemetry data from the GN, DSN, and WOTS (via the EDOS/Ecom interface). Mission-specific requirements for supporting EOS spacecraft operations will be documented in the EOS mission-level Detailed Mission Requirements documents. | |

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| NI-0250#A | A | FOS \| CSMS | Expandable for DSN/WOTS Scheduling | interface | TBD | partially met | ECS shall be expandable to support the capability to communicate with the DSN and WOTS to schedule support for EOS spacecraft beyond AM-1 (in accordance with NASA policy and procedures). | |

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|---|---|---|---|---|---|---|---|---|
| NI-0250#B | B | FOS \| CSMS | Expandable for DSN/WOTS Scheduling | interface | TBD | all functionality complete | ECS shall be expandable to support the capability to communicate with the DSN and WOTS to schedule support for EOS spacecraft beyond AM-1 (in accordance with NASA policy and procedures). | |

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| NI-0250#C | C | FOS \| CSMS | Expandable for DSN/WOTS Scheduling | interface | TBD | all functionality complete | ECS shall be expandable to support the capability to communicate with the DSN and WOTS to schedule support for EOS spacecraft beyond AM-1 (in accordance with NASA policy and procedures). | |
| NI-0310-a#A | A | FOS \| CSMS | FDF Communications Interface | interface | TBD | fully met | ECS shall have the capability to communicate with the FDF via the Ecom interface (FOS and CSMS only). | |

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| NI-0310-a#B | B | FOS \| CSMS | FDF Communications Interface | interface | TBD | no new functionality | ECS shall have the capability to communicate with the FDF via the Ecom interface (FOS and CSMS only). | |
| NI-0310-b#B | B | FOS \| SDPS \| CSMS | FDF Communications Interface | interface | TBD | no new functionality | ECS shall have the capability to communicate with the FDF via the Ecom interface (FOS, SDPS, CSMS) | |
| NI-0330#B | B | FOS | Telemetry Subsets to FDF | interface | TBD | fully met | ECS shall have the capability to send a subset of EOS spacecraft telemetry stream to the FDF, which includes the following:<br>a. Attitude sensor data<br>b. Navigation telemetry data<br>c. Spacecraft maneuver telemetry data | |

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| NI-0340-a#A | A | FOS | Planning & Scheduling Aids from FDF | interface | TBD | TBD | ECS shall have the capability to receive planning and scheduling information for the EOS spacecraft and instruments from the FDF (FDF institutional products only). Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0340-a#B | B | FOS | Planning & Scheduling Aids from FDF | interface | TBD | TBD | ECS shall have the capability to receive planning and scheduling information for the EOS spacecraft and instruments from the FDF (FDF institutional products only). Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0340-b#B | B | FOS | Planning & Scheduling Aids from FDF | interface | TBD | TBD | ECS shall have the capability to receive planning and scheduling information for the EOS spacecraft and instruments from the FDF (AM-1 mission-specific products). Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |
| NI-0350#B | B | FOS | Command parameters from FDF | interface | TBD | fully met | ECS shall have the capability to receive parameters necessary for | |

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| NI-0360#B | B | SDPS | O/A quality checks to FDF | interface | TBD | TBD | ECS shall have the capability to send a notification of orbit or attitude quality checks and request updated (refined/repaired) orbit or attitude data from the FDF when necessary. Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |

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| NI-0365#B | B | SDPS | O/A quality checks from FDF | interface | TBD | TBD | ECS shall have the capability to receive from FDF a notification of orbit or attitude quality checks. Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |

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| NI-0370-a#B | B | SDPS | Orbit/ Attitude products from FDF | interface | TBD | TBD | ECS shall have the capability to receive from FDF, at a minimum the following:<br>a. Repaired Orbit data and associated metadata<br>b. Repaired Attitude data and associated metadata<br>Mission-specific requirements for FDF support of EOS missions will be documented in the EOS mission-level Detailed Mission Requirements documents and FDF-developed ICDs. | |

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| NI-0400#A | A | CSMS | NOLAN Interface | interface | TBD | TBD | ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum):<br>a. Science data<br>b. Ancillary data<br>c. Orbit data | |

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| NI-0400#B | B | CSMS | NOLAN Interface | interface | TBD | no new functionality | ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum):<br>a. Science data<br>b. Ancillary data<br>c. Orbit data | |

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|---|---|---|---|---|---|---|---|---|
| NI-0400#Ir1 | Ir1 | CSMS | NOLAN Interface | interface | TBD | TBD | ECS shall have the capability to interface with NASA Data Processing Facilities (including the GSFC SDPF) via NOLAN to receive the following data (at a minimum):<br>a. Science data<br>b. Ancillary data<br>c. Orbit data | |
| NI-0430#A | A | CSMS | NOLAN Fault Notifications | interface | TBD | fully met | ECS shall have the capability to receive notification of faults in the NOLAN network that may affect the quality of NOLAN services between ECS and its users. | |

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| NI-0430#B | B | CSMS | NOLAN Fault Notifications | interface | TBD | no new functionality | ECS shall have the capability to receive notification of faults in the NOLAN network that may affect the quality of NOLAN services between ECS and its users. | |
| NI-0440#A | A | CSMS | NOLAN Fault Status/ETTR | interface | TBD | fully met | ECS shall have the capability to receive information regarding fault status and estimated time to repair or resolve NOLAN faults that may affect the quality of NOLAN services between ECS and its users. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0440#B | B | CSMS | NOLAN Fault Status/ ETTR | interface | TBD | no new functionality | ECS shall have the capability to receive information regarding fault status and estimated time to repair or resolve NOLAN faults that may affect the quality of NOLAN services between ECS and its users. | |
| NI-0450#A | A | CSMS | NOLAN Fault Summaries | interface | TBD | fully met | ECS shall have the capability to receive periodic summary information about faults that may have affected the quality of NOLAN services between ECS and its users. | |

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|---|---|---|---|---|---|---|---|---|
| NI-0450#B | B | CSMS | NOLAN Fault Summaries | interface | TBD | no new functionality | ECS shall have the capability to receive periodic summary information about faults that may have affected the quality of NOLAN services between ECS and its users. | |
| NI-0460#A | A | CSMS | NOLAN Performance/Link Utilization | interface | TBD | fully met | ECS shall have the capability to receive periodic information regarding NOLAN network performance and link utilization. | |

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| NI-0460#B | B | CSMS | NOLAN Performance/Link Utilization | interface | TBD | no new functionality | ECS shall have the capability to receive periodic information regarding NOLAN network performance and link utilization. | |
| NI-0470#A | A | CSMS | NOLAN Security Breaches | interface | TBD | fully met | ECS shall have the capability to receive notifications of security breaches at NOLAN sites or within the NOLAN network that could potentially affect ECS sites. | |

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| NI-0470#B | B | CSMS | NOLAN Security Breaches | interface | TBD | no new functionality | ECS shall have the capability to receive notifications of security breaches at NOLAN sites or within the NOLAN network that could potentially affect ECS sites. | |
| NI-0480#A | A | CSMS | ECS Security Breaches to NOLAN | interface | TBD | fully met | ECS shall have the capability to send to NOLAN notifications of security breaches at ECS facilities that could affect NOLAN and other EOSDIS sites. | |

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| NI-0480#B | B | CSMS | ECS Security Breaches to NOLAN | interface | TBD | no new functionality | ECS shall have the capability to send to NOLAN notifications of security breaches at ECS facilities that could affect NOLAN and other EOSDIS sites. | |

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| NI-1000#B | B | FOS \| SDPS \| CSMS | ECS RMA | interface | TBD | fully met | ECS functions shall have an operational availability (computed as defined in the Functional and Performance Requirements Specification for the ECS) of 0.96 at a minimum and a Mean Down Time (MDT) of four (4) hours or less, unless otherwise specified. | |

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| NI-1010#B | B | FOS | RMA-critical real time functions | interface | TBD | fully met | The ECS FOS shall have an operational availability of 0.9998 at a minimum and a MDT of one (1) minute or less for critical real time functions that support:<br>a. Launch<br>b. Early orbit checkout<br>c. Disposal<br>d. Orbit adjustment<br>e. Anomaly investigation<br>f. Recovery from safe mode<br>g. Routine real time commanding and associated monitoring for spacecraft and instrument health and safety | |

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| NI-1030#B | B | FOS | RMA for non-critical RT functions | interface | TBD | fully met | The ECS FOS shall have an operational availability of 0.99925 at a minimum and a MDT of five (5) minutes or less for non-critical real time functions. | |

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| NI-1060#A | A | FOS \| CSMS | Loop Delay-Emergency RT Commands | interface | TBD | no new functionality | The ECS shall contribute a loop delay of not greater than 2.5 seconds of the total system delay of five (5) seconds for emergency real time commands, not including the time needed for command execution. The loop delay is measured from the originator to the spacecraft/instrument and back and only applies when a TDRSS link is available for contact to the spacecraft. | |

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|---|---|---|---|---|---|---|---|---|
| NI-1060#B | B | FOS \| CSMS | Loop Delay-Emergency RT Commands | interface | TBD | fully met | The ECS shall contribute a loop delay of not greater than 2.5 seconds of the total system delay of five (5) seconds for emergency real time commands, not including the time needed for command execution. The loop delay is measured from the originator to the spacecraft/instrument and back and only applies when a TDRSS link is available for contact to the spacecraft. | |